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Design of Optimization Parameters with Hybrid Genetic Algorithm Method in Multi-Cavity Injection Molding Process

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Abstract

This paper combines an artificial neural network (ANN) with a traditional genetic algorithm (GA) method, called hybrid genetic algorithm (HGA), to analyze the warpage of multi-cavity plastic injection molding parts. Simulation results indicate that the minimum and the maximum warpage of the hybrid genetic algorithm (HGA) method were lower than that of the traditional GA method and CAE simulation. These results reveal that, when HGA is applied to multi-cavity plastic warpage analysis, the optimal process conditions are significantly better than those using the traditional GA method or CAE simulation.

Key words: Artificial Neural Network (ANN);
Traditional Genetic Algorithm; Warpage